

D2 ~~14~~ ~~52~~ (Amended) The method of claim ~~39~~ further comprising introducing the dissolved carboxylate-alumoxane nanoparticles to a ceramic support.

~~53~~ (Amended) The method of claim ~~52~~ wherein deposition of the nanoparticles takes place on the support.

D3 ~~61~~ ~~32~~ (Amended) The method of claim ~~39~~ further comprising infiltrating the dissolved carboxylate-alumoxane nanoparticles to a ceramic support.

D4 ~~64~~ ~~35~~ (Amended) The method of claim ~~39~~ further comprising dip-coating a fiber in the solution of re-dissolved carboxylate-alumoxane nano-particles and solvent, wherein the fiber is the substrate on which the nanoparticles are deposited in the evaporating step.

~~73~~ ~~34~~ (Amended) The method of claim ~~39~~ wherein the dried nanoparticles are fired slowly at a temperature sufficient to burn off organic constituents.

~~74~~ ~~35~~ (Amended) The method of claim ~~39~~ wherein the dried nanoparticles are fired at a temperature between 25°C and 225°C.

~~75~~ ~~36~~ (Amended) The method of claim ~~39~~ further comprising holding the nanoparticles at a temperature of 225°C for 30 minutes.

D5 ~~76~~ ~~37~~ (Amended) The method of claim ~~39~~ wherein the nanoparticles are fired at a temperature that is ramped from 25°C to 225°C at a rate of 1°C per minute.

~~77~~ ~~38~~ (Amended) The method of claim ~~39~~ further comprising holding the nanoparticles at a temperature of 225°C for 30 minutes.

~~78~~ ~~39~~ (Amended) The method of claim ~~39~~ further comprising holding the nanoparticles at a temperature of 300°C for 80 minutes.

79.4¹⁰ (Amended) The method of claim ~~39~~¹¹ further comprising firing the nanoparticles by ramping the temperature to 1100°C at a rate of 2°C per minute.

80.4¹¹ (Amended) The method of claim ~~79~~⁴⁰ further comprising holding the nanoparticles at a temperature of 1100°C for 400 minutes.

81.4¹² (Amended) The method of claim ~~79~~⁴⁰ further comprising cooling the nanoparticles slowly to room temperature.